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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,137	12/16/2003	Timo Eriksson	884A.0029.U1(US)	5976
29683 7590 05/23/2007 HARRINGTON & SMITH, PC 4 RESEARCH DRIVE SHELTON, CT 06484-6212			EXAMINER BALAOING, ARIEL A	
			ART UNIT	PAPER NUMBER
			2617	
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			05/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/737,137	<b>Applicant(s)</b> ERIKSSON ET AL.	
	<b>Examiner</b> Ariel Balaoing	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7-22 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-22 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/12/2007 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 03/12/2007 have been fully considered but they are not persuasive.

Regarding the applicant's argument that "Browne does not disclose or suggest that the polymer film is bistable, such that voltage may be applied to it to alter it between its first and second configurations, but application of voltage is not necessary to maintain it in either its first or its second configuration" as recited in the combination of claims 1 and 6. Browne only discloses that the polymer film 16 changes shape when a voltage is applied thereto, it does not disclose that the polymer film maintains its shape when the voltage is removed. Since non-bistable polymer actuators behave in the same way as the polymer film 16 disclosed in Browne, Browne does not disclose or suggest bistable polymer actuators." (see page 8 of the remarks); the examiner respectfully disagrees. Both bistable and non-bistable electroactive polymers behave as described in Browne. However, it can be seen that Browne suggests and

encourages the use of dielectric polymer actuators in paragraphs 26-28. Dielectric polymers inherently do not need power to keep an actuator at a given position, as opposed to ionic polymers which require power to keep an actuator at a given position.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3-5, 7, 8, 13-22, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHIODO et al (US 2002/0062547) in view of MOCKRIDGE et al (US 6,876,543) and further in view of BROWNE et al (US 2004/0074069).

Regarding claims 1 (apparatus) and 22 (method), CHIDO discloses a hand-portable device (Figure 1, paragraph 65), including: a circuit assembly (paragraph 5); a cover encasing the circuit assembly (**10a, 10b**, Figure 1; paragraph 65); a closing arrangement, which includes a polymer actuator (paragraph 38-40), alterable between a first condition which retains at least a part of the cover on the circuit assembly and a second condition in which it allows the part of the cover to be removed from the circuit assembly (paragraph 68-69). However, CHIODO does not expressly disclose wherein the device includes an engine assembly. In the same field of the endeavor, MOCKRIDGE discloses housing for a portable device and a method assembling the same. MOCKRIDGE further teaches a portable device which includes an engine assembly (**16** Figure 1; col. 2, line 64-col. 3, line 38). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify CHIODO to include an engine assembly, as taught by MOCKRIDGE, since such

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a modification would facilitate improved housing and assembly of the portable device of CHIODO. The combination of CHIODO and MOCKRIDGE further disclose applying heat transfer to the polymer actuator and further teaches passing an electrical current through the material. However, the combination of CHIODO and MOCKRIDGE does not expressly disclose wherein the polymer actuator includes an electroactive polymer, the electroactive polymer being a polymer which is capable of converting electrical to mechanical energy, wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer between its first and second configuration, but application of voltage is not necessary to maintain it in either its first or its second configuration.

BROWNE teaches wherein the polymer actuator includes an electroactive polymer, the electroactive polymer being a polymer which is capable of converting electrical to mechanical energy, wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer between its first and second configuration (Figure 1-7, paragraph 16, 26-28), but application of voltage is not necessary to maintain it in either its first or its second configuration (paragraph 16, 17, 26-28; Browne suggests and encourages the use of dielectric polymer actuators in paragraphs 26-28. Dielectric polymers inherently do not need power to keep an actuator at a given position, as opposed to ionic polymers which require power to keep an actuator at a given position). Therefore it would have been obvious to a person of ordinary skill in the art to modify the combination of CHIODO and MOCKRIDGE to include an electroactive polymer, as taught by BROWNE, since the use of electroactive polymers for retaining and/or fastening is well known and conventional in the art.

Regarding claim 3, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the closing arrangement includes means for altering the configuration of the polymer actuator between the first configuration and the second configuration by selectively applying a voltage to the polymer actuator (CHIODO – paragraph 86-90; BROWNE – paragraph 16, 26-28).

Regarding claim 4, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the polymer actuator includes a conductive polymer (CHIODO - paragraph 86, 96).

Regarding claim 5, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the polymer actuator further includes an electrolyte sandwiched between two electrodes, one of the electrodes comprising the conductive polymer (BROWNE – paragraph 16-19, 26-28).

Regarding claim 7, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the polymer actuator in its first condition mechanically retains the cover on the engine assembly (CHIODO – paragraph 68).

Regarding claim 8, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the device is configured such that when the closing

arrangement is in the second condition, at least a part of the cover is forced out of contact with the engine assembly (CHIODO – paragraph 69).

Regarding claim 13, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the cover includes at least two cover parts which are detachable from the engine assembly, the cover being retained on the engine assembly by attaching the cover parts together to encase the engine assembly or by attaching each cover part to the engine assembly (MOCKRIDGE – Figure 1, 10, 11; col. 2, line 64-col. 3, line 38).

Regarding claim 14, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the cover includes one cover part which is permanently attached to the engine assembly and one cover part which is detachable from the engine assembly, the cover being retained on the engine assembly by attaching the detachable cover parts to the other cover part or to the engine assembly (MOCKRIDGE – col. 3, line 29-38).

Regarding claim 15, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the closing arrangement may selectively retain together first and second closure portions of the hand-portable device, in order to selectively retain the part of cover on the engine assembly, the first closure portion being on one cover part and the second closure portion on the other cover part, or the

first closure portion being on one of the cover parts and the second closure portion on the engine assembly (MOCKRIDGE – Figure 1, 10, 11; col. 2, line 64-col. 3, line 38).

Regarding claim 16, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the device is configured such that when the two closure portions are retained together by the closing arrangement, a waterproof seal is formed between the closure portions (BROWNE - Figure 1, 6, paragraph 16-19, 26-28; waterproof seal is formed between the closure portions).

Regarding claim 17, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the polymer actuator is located in one of the closure portions, and the other portion is shaped to define a recess into which the polymer actuator may extend when in its first condition, to retain the two closure portions together and thereby retain the cover on the engine assembly (BROWNE – Figure 1, 6, paragraph 16-19, 26-28).

Regarding claim 18, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein each cover part of the hand-portable device includes a body portion for covering a back or front of the engine assembly and a perimeter portion, the respective perimeter portions contacting one another when the cover encases the engine assembly, the perimeter portions of the cover parts



comprising the closure portions (MOCKRIDGE – figure 1, 10, 11; col. 2, line 64-col. 3, line 38).

Regarding claim 19, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein the polymer actuator extends substantially around the perimeter portion of one cover part and the recess extends substantially around the perimeter portion of the other cover part, the polymer actuator on the one cove part selectively extending into the recess on the other cover part to retain the two cover parts together (BROWNE – Figure 1; paragraph 16-19).

Regarding claim 20, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses wherein a plurality of discrete polymer actuators are provided around the perimeter portion of one cover part, with complimentary recesses being defined within the other cover part (BROWNE – Figure 1; paragraph 16-19).

Regarding claim 21, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE and BROWNE further discloses a cove part for a hand-portable device according to claim 1, the cover part including a polymer actuator, the configuration of which may be altered to alter the condition of the closing arrangement of the hand-portable device (CHIODO – paragraph 69, 86-90; BROWNE – paragraph 16, 26-28).

Regarding claim 27, CHIDO discloses a hand-portable device including an assembly and a cover encasing the assembly, the cover being formed in at least two

parts and the device including a sealing arrangement for sealing between the two parts or between one of the cover parts and the assembly, the sealing arrangement including a polymer actuator (Figure 1; paragraph 38-40, 68-69). However, CHIODO does not expressly disclose wherein the device includes an engine assembly. In the same field of the endeavor, MOCKRIDGE discloses housing for a portable device and a method assembling the same. MOCKRIDGE further teaches a portable device which includes an engine assembly (16 Figure 1; col. 2, line 64-col. 3, line 38). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify CHIODO to include an engine assembly, as taught by MOCKRIDGE, since such a modification would facilitate improved housing and assembly of the portable device of CHIODO. However, the combination of CHIODO and MOCKRIDGE does not expressly disclose, wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer actuator between its first and second configurations, but application of voltage is not necessary to maintain it in either its first or its second configuration. BROWNE teaches wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer between its first and second configuration (Figure 1-7, paragraph 16, 26-28), but application of voltage is not necessary to maintain it in either its first or its second configuration (paragraph 16, 17, 26-28; Browne suggests and encourages the use of dielectric polymer actuators in paragraphs 26-28. Dielectric polymers inherently do not need power to keep an actuator at a given position, as opposed to ionic polymers which require power to keep an actuator at a given position). Therefore it would have been obvious to a person of ordinary skill in the

art to modify the combination of CHIODO and MOCKRIDGE to include an electroactive polymer, as taught by BROWNE, since the use of electroactive polymers for retaining and/or fastening is well known and conventional in the art.

5. Claims 9, 10, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHIODO et al (US 2002/0062547) in view of MOCKRIDGE et al (US 6,876,543) and in view of BROWNE et al (US 2004/0074069) and further in view of STANISZEWSKI (US 2004/0075581).

Regarding claim 9, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of CHIODO, MOCKRIDGE, and BROWNE does not expressly disclose wherein the device includes input means for allowing the input of security information to control the selective alteration of the polymer actuator between the first and second configurations. STANISZEWSKI teaches wherein a device includes input means for allowing the input of security information to control the selective alteration of the polymer actuator between a first and second configurations (paragraph 73). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of CHIODO, MOCKRIDGE, and BROWNE to include input means for allowing the input of security information such as a code, which may be input on the hand-portable device, to control the selective alteration of the polymer actuator as taught by STANISZEWSKI, since such a modification would enhance security by preventing unauthorized usage or locking/unlocking of the device.

Regarding claim 10, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI further discloses wherein the hand portable device includes a receiver for receiving the security information from a remote source (STANISZEWSKI – paragraph 73).

Regarding claim 24, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE, and BROWNE discloses selective application of the voltage to the hand-portable device (BROWNE – paragraph 16-17, 26-28). However, the combination of CHIODO, MOCKRIDGE, and BROWNE, does not disclose selective application of the voltage controlled by the input of security information to the hand-portable device (paragraph 73). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of CHIODO, MOCKRIDGE, and BROWNE to include input means for allowing the input of security information such as a code, which may be input on the hand-portable device, to control the selective alteration of the polymer actuator as taught by STANISZEWSKI, since such a modification would enhance security by preventing unauthorized usage or locking/unlocking of the device.

Regarding claim 25, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI further discloses wherein the security information is input via a user input of the hand-portable device (STANISZEWSKI – paragraph 73).

6. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHIODO et al (US 2002/0062547) in view of MOCKRIDGE et al (US 6,876,543) and in view of BROWNE et al (US 2004/0074069) and in view of STANISZEWSKI (US 2004/0075581) and in further view of MATSUNAGA (JP 11039053 A).

Regarding claim 11, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI does not disclose wherein the hand portable device includes a receiver for receiving the security information from a remote source. MATSUNAGA discloses wherein the hand portable device includes a receiver for receiving the security information from a remote source (paragraph 12-15). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI to include receiving security information from a remote source, as taught by MATSUNAGA, since the use of remote authentication for accessing a secured device is well known and established in the art.

Regarding claim 26, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI does not disclose wherein the security information is input from a remote source that is one of a an external device via a communication network. MATSUNAGA discloses wherein the security information is input from a remote source that is one of an external device via a communication network (paragraph 12-15). Therefore it would have been obvious to a person of

ordinary skill in the art at the time the invention was made to modify the combination of CHIODO, MOCKRIDGE, BROWNE, and STANISZEWSKI to include receiving security information from a remote source, as taught by MATSUNAGA, since the use of remote authentication for accessing a secured device is well known and established in the art.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over CHIODO et al (US 2002/0062547) in view of MOCKRIDGE et al (US 6,876,543) and in view of BROWNE et al (US 2004/0074069) and in further view of MATSUNAGA (JP 11039053 A).

Regarding claims 12, CHIDO discloses a hand-portable device (Figure 1, paragraph 65), including: a circuit assembly (paragraph 5); a cover encasing the circuit assembly (**10a, 10b**, Figure 1; paragraph 65); a closing arrangement including a polymer actuator alterable between a first condition in which it retains at least a part of the cover on the circuit assembly and a second condition in which it allows the part of the cover to be removed from the circuit assembly (paragraph 68-69). However, CHIODO does not expressly disclose wherein the device includes an engine assembly. In the same field of the endeavor, MOCKRIDGE discloses housing for a portable device and a method assembling the same. MOCKRIDGE further teaches a portable device which includes an engine assembly (**16** Figure 1; col. 2, line 64-col. 3, line 38). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify CHIODO to include an engine assembly, as taught by MOCKRIDGE, since such a modification would facilitate improved housing and assembly of the portable device of CHIODO. The combination of CHIODO and

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MOCKRIDGE further disclose applying heat transfer to the polymer actuator and further teaches passing an electrical current through the material. However, the combination of CHIODO and MOCKRIDGE does not expressly disclose wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer between its first and second configuration, but application of voltage is not necessary to maintain it in either its first or its second configuration. BROWNE teaches wherein the polymer actuator includes an electroactive polymer, the electroactive polymer being a polymer which is capable of converting electrical to mechanical energy, wherein the polymer actuator is bistable, such that voltage may be applied to alter the polymer between its first and second configuration (Figure 1-7, paragraph 16, 26-28), but application of voltage is not necessary to maintain it in either its first or its second configuration (paragraph 16, 17, 26-28; Browne suggests and encourages the use of dielectric polymer actuators in paragraphs 26-28. Dielectric polymers inherently do not need power to keep an actuator at a given position, as opposed to ionic polymers which require power to keep an actuator at a given position). Therefore it would have been obvious to a person of ordinary skill in the art to modify the combination of CHIODO and MOCKRIDGE to include an electroactive polymer, as taught by BROWNE, since the use of electroactive polymers for retaining and/or fastening is well known and conventional in the art. However, the combination of CHIODO, MOCKRIDGE and BROWNE, does not expressly disclose wherein the hand-portable device is configured such that it becomes partially or completely non-functional if the cover is removed from the engine assembly in the absence of input of predetermined security information. MATSUNAGA teaches

wherein the hand-portable device is configured such that it becomes partially or completely non-functional if the cover is removed from the engine assembly in the absence of input of predetermined security information (paragraph 39, 44). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of CHIODO, MOCKRIDGE, and BROWNE, to include the security method, as taught by MATSUNAGA, since MATSUNAGA states that such a modification can effectively prevent the leakage of information and provide a secure method of access.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

KORNBLUH et al (US 2002/0175594 A1) – Variable stiffness electroactive polymer system

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ariel Balaoing whose telephone number is (571) 272-7317. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (571) 272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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AB



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